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| EXAMINER | |
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| LEUNG, CHRISTINA Y | |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/609,332 | STEINHORST ET AL. | |
| | Examiner | Art Unit | |
| | Christina Y. Leung | 2613 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. **Claims 1, 2, 4-10, 12-15, 32, and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** (US 2004/0179518 A1) in view of **Gaskill** (US 5,629,940 A).

Regarding **claim 1**, Bruckman et al. disclose a method for providing communications service during an upgrade of an optical communications ring formed from a plurality of nodes (Figures 1 and 4), each node operable to transmit and receive a first frame having a number of first time slots equal to N, wherein N is an integer and the first time slots are occupied by data, the method comprising:

upgrading a first node (such as the node connected to ADM 24A as shown in Figures 1 and 4) in the optical communications ring by increasing a data transmission rate of the first node to an increased rate, the first node coupled to a second node (such as the node connected to the other ADM 24B), the second node operable to transmit data at the data transmission rate;

at the increased rate, transmitting data in a second frame from the first node to the second node, the second frame having a number of second time slots equal to M, wherein M is an integer greater than N and the data occupies a number of the second time slots of the second frame equal to N (page 5, paragraph [0075]);

receiving the second frame at the second node; and

detecting, at the second node, the data in the second time slots of the second frame (page 5, paragraph [0075]).

Examiner notes that Bruckman et al. disclose that while the other nodes are not yet similarly upgraded to a higher rate (i.e., OC-192) and are still operating at the original rate (i.e., OC-48), the upgraded node transmits data at a limited capacity to match the original rate: the new OC-192 cards "are configured at this stage for 4xSTS-48c channelized operation. After the replacement is completed...traffic resumes on segment 76. Only one of the four available STS-48c channels is used at this stage" (Bruckman et al., page 5, paragraph [0075]). In other words, the upgraded node now has a higher rate comprising M time slots, but until the other nodes are also upgraded, the data transmitted by the upgraded node occupies only the number of time slots corresponding to the old rate (i.e., N time slots).

Further regarding claim 1, Bruckman et al. do not specifically disclose providing at least one identifier to the second node, the at least one identifier identifying the occupied second time slots of the second frame.

However, Gaskill teaches a system that is related to the one disclosed by Bruckman et al. including communicating data in frames having time slots and further teaches providing at least one identifier to a receiving node, the at least one identifier identifying the occupied time slots of the frame (column 2, lines 13-29). Regarding claim 1, it would have been obvious to a person of ordinary skill in the art to provide at least one identifier as taught by Gaskill in the system disclosed by Bruckman et al. in order to enable the receiving node to acquire the data more quickly (Gaskill, column 2, lines 8-15).

Regarding **claims 8, 9, and 14** as similarly discussed above with regard to claim 1, Bruckman et al. disclose a method (Figures 1 and 4) for providing communications service in a communications ring formed from a plurality of existing nodes each operable to transmit, at an existing rate, a first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer, the method comprising:

increasing the existing rate of a node (such as the node connected to ADM 24A as shown in Figures 1 and 4) to a higher rate, the node operable to transmit a second frame at the higher rate, the second frame having a higher number of time slots than the first frame;

occupying a number of the time slots of the second frame equal to N using data to be received by at least one of the existing nodes;

transmitting the second frame of data to the at least one of the existing nodes;

receiving the second frame at the existing node; and

detecting, at the existing node, the data in the time slots of the second frame (page 5, paragraph [0075]).

Again, Examiner notes that Bruckman et al. disclose that while the other nodes are not yet similarly upgraded to a higher rate (i.e., OC-192) and are still operating at the original rate (i.e., OC-48), the upgraded node transmits data at a limited capacity to match the original rate: the new OC-192 cards "are configured at this stage for 4xSTS-48c chanellized operation. After the replacement is completed...traffic resumes on segment 76. Only one of the four available STS-48c channels is used at this stage" (Bruckman et al., page 5, paragraph [0075]). In other words, the upgraded node now has a higher rate comprising M time slots, but until the other

nodes are also upgraded, the data transmitted by the upgraded node occupies only the number of time slots corresponding to the old rate (i.e., N time slots).

Further regarding claims 8, 9, and 14, Bruckman et al. do not specifically disclose providing at least one identifier to the at least one of the existing nodes, the identifier identifying the occupied time slots of the second frame.

However, Gaskill teaches a system that is related to the one disclosed by Bruckman et al. including communicating data in frames having time slots and further teaches providing at least one identifier to a receiving node, the at least one identifier identifying the occupied time slots of the frame (column 2, lines 13-29). Regarding claims 8, 9, and 14 it would have been obvious to a person of ordinary skill in the art to provide at least one identifier as taught by Gaskill in the system disclosed by Bruckman et al. in order to enable the receiving node to acquire the data more quickly (Gaskill, column 2, lines 8-15).

Regarding **claim 6** and also further regarding **claim 14**, Bruckman et al. disclose generating a third frame at the second node, the third frame having a number of occupied time slots equal to N occupied by the detected data and no unoccupied time slots; and transmitting the third frame to one of the nodes (in other words, Bruckman et al. disclose the second node generates and transmits a third frame having N time slots, all of which are occupied with data, since the second node is operating at the original transmission rate; page 5, paragraphs [0073]-[0075]).

Regarding **claim 2**, Bruckman et al. disclose after the transmission of the second frame, upgrading all of the nodes by increasing the data transmission rate of each node to the rate that is higher than the data transmission rate;

occupying, using data, all of a number of third time slots of a third frame, wherein the number of third time slots equals M; and

transmitting the third frame (pages 5-6, paragraphs [0076]-[0077]; Bruckman et al. disclose, for example, that M equals 192 and eventually all of the nodes transmit frames at that rate).

Similarly, regarding **claim 10**, Bruckman et al. disclose that the second frame has a number of the time slots equal to M, wherein M is an integer, and further comprising:

after the transmission of the second frame, upgrading all of the existing nodes by increasing the existing rate to the higher rate; and

transmitting another frame having a number of the time slots equal to M from an upgraded one of the existing nodes (pages 5-6, paragraphs [0076]-[0077]; Bruckman et al. disclose, for example, that M equals 192 and eventually all of the nodes transmit frames at that rate).

Further regarding both claims 2 and 10, again Bruckman et al. do not specifically disclose at least one identifier identifying the occupied time slots of the second frame and therefore do not specifically disclose directing the second node to ignore the at least one identifier. However, as discussed above with regard to claims 1 and 8, the system described by Bruckman et al. in view of Gaskill includes at least one identifier identifying the occupied time slots of the second frame (column 2, lines 13-29). Gaskill further teaches directing the receiving node to ignore the at least one identifier after the particular time slots corresponding to the identifier have been already received (column 4, lines 32-42). Regarding claims 2 and 10, it would have been obvious to a person of ordinary skill in the art to direct the second/existing node to ignore the at least one

identifier as taught by Gaskill in the system disclosed by Bruckman et al. in order to enable the node to read another frame with data in all the time slots (i.e., a frame that does not have data in only particular time slots) after the upgrade is completed.

Regarding **claims 4 and 5**, Bruckman et al. disclose that M equals 192 ands N equals 48, and that the data transmission rate is approximately 2.5 gigabits per second and the increased rate is approximately 10 gigabits per second (page 5, paragraph [0075]). Similarly, regarding **claims 12 and 13**, Bruckman et al. disclose that the higher number of the time slots is equal to exactly 192 time slots and N equals 48, and that the existing rate is approximately 2.5 gigabits per second and the higher9 rate is approximately 10 gigabits per second (page 5, paragraph [0075]).

Regarding **claim 7**, Bruckman et al. disclose setting a first data receipt rate of the upgraded first node to equal the data transmission rate of a non-upgraded node; setting a second data receipt rate of the second node to equal the increased rate of the first node; receiving, at the upgraded first node, the first frame at the first data receipt rate; and wherein receiving the second frame at the second node comprises receiving the second frame at the second data receipt rate (pages 5-6, paragraphs [0073]-[0078]). Specifically, Bruckman et al. disclose that the upgraded first node now has a higher transmission rate comprising M time slots, but until the other (second) node is also upgraded, the upgraded first node only receives data at the original data transmission rate of a non-upgraded node (since the other node can only transmit data to the first node at the original rate).

Regarding **claim 15**, Bruckman et al. disclose that the data is divided into a plurality of categories (i.e., "categories" each corresponding to one of a plurality of STS-48c channels), and the higher number of time slots (i.e., the 192 time slots) are divided into a plurality of sections

each corresponding to a particular one of the categories, and wherein each category of data occupies only a corresponding section of the time slots (page 5, paragraph [0075]).

Regarding **claim 32**, Bruckman et al. disclose transmitting data in the first frame from the second node to the first node at the data transmission rate (page 5, paragraph [0076]).

Regarding **claim 33**, Bruckman et al. disclose transmitting data in the first frame from a first existing node to a second existing node at the existing rate (page 5, paragraph [0076]).

3. **Claims 3 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** in view of **Gaskill** as applied to claims 1 and 8 above, and further in view of **Krishnamoorthy et al.** (US 6,625,165 A).

Regarding **claims 3 and 11**, Bruckman et al. in view of Gaskill describe a method as discussed above with regard to claims 1 and 8, including data comprising payload data, but they do not specifically disclose redundancy data.

However, Krishnamoorthy et al. teach a system that is related to the one described by Bruckman et al. in view of Gaskill, including transmitting data in frames having time slots (Figure 3). Krishnamoorthy et al. further teach transmitting data comprising payload data and redundancy data, and wherein the payload data 317 occupies a first group of the time slots designated for payload data and the redundancy data 319 occupies a second group of the time slots designated for redundancy data (column 4, lines 23-34).

Regarding claims 3 and 11, it would have been obvious to a person of ordinary skill in the art to include redundancy data as taught by Krishnamoorthy et al. in the system described by Bruckman et al. in view of Gaskill in order to advantageously correct any errors in the payload data.

4. **Claim 16** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** in view of **Fatehi et al.** (US 6,694,100 B1).

Regarding **claim 16**, Bruckman et al. disclose a node for forming an optical communications ring that includes a plurality of existing nodes each operable to transmit, at an existing rate, a first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer (Figures 1 and 4), the node comprising:

a bit transmission unit operable to transmit a second frame to an existing node of the optical communications ring at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame (i.e., 192 time slots instead of 48; page 5, paragraph [0075]).

Bruckman et al. further generally disclose that the node is operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit (page 5, paragraph [0075]), but they do not specifically disclose a switch unit for performing this function.

However, Fatehi et al. teach a system that is related to the one disclosed by Bruckman et al. including transmitting frames having time slots occupied by data in an optical communications ring (Figures 1 and 2). They further teach a switch unit 211 and 212 operate to fill a number of time slots with data (column 4, lines 33-57). Regarding claim 16, it would have been obvious to a person of ordinary skill in the art to include a switch unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame. Again, Bruckman et al. already generally discloses transmitting data in selected time slots.

5. **Claims 31 and 17-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** in view of **Fatehi et al.** and **Gaskill**.

Regarding **claim 31**, as similarly discussed above with regard to claim 16, Bruckman et al. disclose a node for forming an optical communications ring that includes a plurality of existing nodes each operable to transmit, at an existing rate, a first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer (Figures 1 and 4), the node comprising:

a bit transmission unit operable to transmit a second frame to an existing node of the optical communications ring at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame (i.e., 192 time slots instead of 48; page 5, paragraph [0075]).

Further regarding claim 31, Bruckman et al. further generally disclose that the node is operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit (page 5, paragraph [0075]), but they do not specifically disclose a switch unit for performing this function.

However, Fatehi et al. teach a system that is related to the one disclosed by Bruckman et al. including transmitting frames having time slots occupied by data in an optical communications ring (Figures 1 and 2). They further teach a switch unit 211 and 212 operate to fill a number of time slots with data (column 4, lines 33-57). Regarding claim 31, it would have been obvious to a person of ordinary skill in the art to include a switch unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots

for containing data in the transmitted frame. Again, Bruckman et al. already generally disclose transmitting data in selected time slots.

Further regarding claim 31, Bruckman et al. do not specifically disclose that the existing node comprises at least one identifier identifying the occupied time slots of the second frame.

However, Gaskill teaches a system that is related to the one disclosed by Bruckman et al. including communicating data in frames having time slots and further teaches providing at least one identifier to a receiving node, the at least one identifier identifying the occupied time slots of the frame (column 2, lines 13-29). Regarding claim 31, it would have been obvious to a person of ordinary skill in the art to provide at least one identifier as taught by Gaskill in the system described by Bruckman et al. in view of Fatehi et al. in order to enable the receiving node to acquire the data more quickly (Gaskill, column 2, lines 8-15).

Regarding **claims 18 and 19**, Bruckman et al. disclose that the higher number of the time slots is equal to exactly 192 time slots and N equals 48, and that the existing rate is approximately 2.5 gigabits per second and the higher rate is approximately 10 gigabits per second (page 5, paragraph [0075]).

Regarding **claim 20**, Bruckman et al. disclose that the data is divided into a plurality of categories (i.e., "categories" each corresponding to one of a plurality of STS-48c channels), and the time slots are divided into a plurality of sections each corresponding to a particular one of the categories (page 5, paragraph [0075]). Again, although Bruckman et al. do not specifically disclose a switch unit, it would have been obvious to a person of ordinary skill in the art to include a switch unit controlled by a signaling unit as taught by Fatehi et al. in the system

disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame.

Regarding **claim 21**, Bruckman et al. disclose that data frame transmission is coordinated with the existing nodes using a protocol that aligns with the existing rate (page 5, paragraph [0075]), and Fatehi et al. further teach a signaling unit (i.e., controller 205) which provides control to the switch unit 211-212. Again, it would have been obvious to a person of ordinary skill in the art to include a switch unit controlled by a signaling unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame. Again, Bruckman et al. already generally discloses transmitting data in selected time slots and that data frame transmission is coordinated with the existing nodes using a protocol that aligns with the existing rate.

Regarding **claim 22**, Bruckman et al. do not specifically disclose a laser for transmitting frames, but they do disclose transmitting optical signals (i.e., "patterns of light pulses" as recited in the claim). It is well understood in the optical communications art that lasers may be used for optically transmitting data in networks such as disclosed by Bruckman et al. Fatehi et al. in particular also generally teach using lasers to transmit data as a pattern of light pulses (column 3, lines 51-54). It would have been obvious to a person of ordinary skill in the art to specifically include a laser as taught by Fatehi et al. in the system described by Bruckman et al. in view of Fatehi et al. and Gaskill in order to effectively provide the already-disclosed light pulses using a widely available and commonly known light source device.

6. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** in view of **Fatehi et al.** and **Gaskill** as applied to claim 31 above, and further in view of **Krishnamoorthy et al.**

Regarding **claim 17**, Bruckman et al. in view of Fatehi et al. and Gaskill describe a system as discussed above with regard to claim 31, including data comprising payload data and a switch unit operable to selectively fill time slots with data, but they do not specifically disclose redundancy data.

However, Krishmoorthy et al. teach a system that is related to the one described by Bruckman et al. in view of Fatehi et al. and Gaskill, including transmitting data in frames having time slots (Figure 3). Krishmoorthy et al. further teach transmitting data comprising payload data and redundancy data, and wherein the payload data 317 occupies a first group of the time slots designated for payload data and the redundancy data 319 occupies a second group of the time slots designated for redundancy data (column 4, lines 23-34).

Regarding claim 17, it would have been obvious to a person of ordinary skill in the art to include redundancy data as taught by Krishnamoorthy et al. in the system described by Bruckman et al. in view of Fatehi et al. and Gaskill in order to advantageously correct any errors in the payload data.

7. **Claims 23, 24, and 26-30** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bruckman et al.** in view of **Fatehi et al.**, **Gaskill**, and **Taniguchi** (US 6,130,764 A).

Regarding **claims 23 and 24**, Bruckman et al. disclose a system for forming an optical communications ring (Figures 1 and 4), comprising:

a first node operable to transmit and receive a first frame at an existing rate, the first frame having a number of occupied time slots equal to N occupied by data, wherein N is an integer;

a second node coupled to the first node through optical fiber to form a ring, the second node comprising:

a bit transmission unit operable to transmit a second frame to the first node at a rate that is higher than the existing rate, the second frame having a higher number of time slots than the first frame (i.e., 192 time slots instead of 48; page 5, paragraph [0075]).

Further regarding claim 23 in particular, Bruckman et al. further generally disclose that the second node is operable to generate a pattern of data that fills a number of the time slots of the second frame equal to N and to send the pattern of data to the bit transmission unit (page 5, paragraph [0075]), but they do not specifically disclose a switch unit for performing this function.

However, Fatehi et al. teach a system that is related to the one disclosed by Bruckman et al. including transmitting frames having time slots occupied by data in an optical communications ring (Figures 1 and 2). They further teach a switch unit 211 and 212 operate to fill a number of time slots with data (column 4, lines 33-57). Regarding claim 23, it would have been obvious to a person of ordinary skill in the art to include a switch unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame. Again, Bruckman et al. already generally disclose transmitting data in selected time slots.

Further regarding claim 23 and also regarding claim 24, Bruckman et al. do not specifically disclose that the first node comprises at least one identifier identifying the occupied time slots of the second frame and that the first node is operable to receive the second frame and detect the data in the identified time slots of the second frame according to the at least one identifier.

However, Gaskill teaches a system that is related to the one disclosed by Bruckman et al. including communicating data in frames having time slots and further teaches providing at least one identifier to a receiving node, the at least one identifier identifying the occupied time slots of the frame (column 2, lines 13-29). Regarding claims 23 and 24, it would have been obvious to a person of ordinary skill in the art to provide at least one identifier as taught by Gaskill in the system described by Bruckman et al. in view of Fatehi et al. in order to enable the receiving node to acquire the data more quickly (Gaskill, column 2, lines 8-15).

Further regarding claim 23 in particular, Bruckman et al. disclose a ring but do not specifically disclose a bi-directional line switched ring. However, Taniguchi teach a system that is related to the one disclosed by Bruckman et al. including an optical communication ring network and further teach a bi-direction line switched ring topology (Figures 38a-b; column 2, lines 37-67). Regarding claim 23, it would have been obvious to a person of ordinary skill in the art to provide a bi-directional line switched ring as taught by Taniguchi in the system described by Bruckman et al. in view of Fatehi et al. and Gaskill in order to effectively provide alternative communication paths in the event of network faults.

Regarding **claims 26 and 27**, Bruckman et al. disclose that the higher number of the time slots is equal to exactly 192 time slots and N equals 48, and that the existing rate is

approximately 2.5 gigabits per second and the higher rate is approximately 10 gigabits per second (page 5, paragraph [0075]).

Regarding **claim 28**, Bruckman et al. disclose that the data is divided into a plurality of categories (i.e., "categories" each corresponding to one of a plurality of STS-48c channels), and the time slots are divided into a plurality of sections each corresponding to a particular one of the categories (page 5, paragraph [0075]). Again, although Bruckman et al. do not specifically disclose a switch unit, it would have been obvious to a person of ordinary skill in the art to include a switch unit controlled by a signaling unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame.

Regarding **claim 29**, Bruckman et al. disclose that data frame transmission is coordinated with the existing nodes using a protocol that aligns with the existing rate (page 5, paragraph [0075]), and Fatehi et al. further teach a signaling unit (i.e., controller 205) which provides control to the switch unit 211-212. Again, it would have been obvious to a person of ordinary skill in the art to include a switch unit controlled by a signaling unit as taught by Fatehi et al. in the system disclosed by Bruckman et al. in order to effectively select particular time slots for containing data in the transmitted frame. Again, Bruckman et al. already generally discloses transmitting data in selected time slots and that data frame transmission is coordinated with the existing nodes using a protocol that aligns with the existing rate.

Regarding **claim 30**, Bruckman et al. do not specifically disclose a laser for transmitting frames, but they do disclose transmitting optical signals (i.e., "patterns of light pulses" as recited in the claim). It is well understood in the optical communications art that lasers may be used for

optically transmitting data in networks such as disclosed by Bruckman et al. Fatehi et al. in particular also generally teach using lasers to transmit data as a pattern of light pulses (column 3, lines 51-54). It would have been obvious to a person of ordinary skill in the art to specifically include a laser as taught by Fatehi et al. in the system described by Bruckman et al. in view of Fatehi et al., Gaskill, and Taniguchi in order to effectively provide the already-disclosed light pulses using a widely available and commonly known light source device.

8. **Claim 25** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bruckman et al. in view of **Fatehi et al.**, **Gaskill**, and **Taniguchi** as applied to claim 23 above, and further in view of **Krishnamoorthy et al.**

Regarding **claim 25**, Bruckman et al. in view of Fatehi et al., Gaskill, and Taniguchi describe a system as discussed above with regard to claim 23, including data comprising payload data and a switch unit operable to selectively fill time slots with data, but they do not specifically disclose redundancy data.

However, Krishmoorthy et al. teach a system that is related to the one described by Bruckman et al. in view of Fatehi et al., Gaskill, and Taniguchi including transmitting data in frames having time slots (Figure 3). Krishmoorthy et al. further teach transmitting data comprising payload data and redundancy data, and wherein the payload data 317 occupies a first group of the time slots designated for payload data and the redundancy data 319 occupies a second group of the time slots designated for redundancy data (column 4, lines 23-34).

Regarding claim 25, it would have been obvious to a person of ordinary skill in the art to include redundancy data as taught by Krishnamoorthy et al. in the system described by

Bruckman et al. in view of Fatehi et al., Gaskill, and Taniguchi in order to advantageously correct any errors in the payload data.

***Response to Arguments***

9. Applicant's arguments filed 15 October 2007 have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's assertion on pages 12-14 of the response that "the references do not teach or suggest 'upgrading a first node in the optical communications ring by increasing a data transmission rate of the first node to an increased rate, the first node coupled to a second node' and 'the second node operable to transmit data at the data transmission rate'....Instead, Bruckman teaches a simultaneous rate increase throughout the network."

Examiner respectfully disagrees with Applicant's assertion that Bruckman et al. teach a "simultaneous rate increase through the network" and respectfully submits that Bruckman et al. instead disclose a system that is similar to the one recited in Applicant's claims. Examiner respectfully maintains that like Applicant's invention, the system disclosed by Bruckman et al. first upgrades one node of the network of nodes to a higher transmission rate, such as OC-192, from a lower original rate, such as OC-48 (Bruckman et al., in page 5, paragraph [0075], specifically disclose physically replacing OC-48 cards of one node to OC-192 cards and therefore clearly disclose upgrading one node to the higher rate first, not a "simultaneous rate increase"). The upgraded node now has a higher rate comprising M time slots, but until the other nodes are also upgraded, Bruckman et al. disclose that the data transmitted by the upgraded node occupies only the number of time slots corresponding to the old rate (i.e., N time slots). Like

Applicant's invention, the system disclosed by Bruckamn et al. has a node with an upgraded rate temporarily transmitting data only in selected time slots. When all of the nodes have been upgraded, then all of the increased number of time slots may be occupied with data.

Examiner further respectfully disagrees with Applicant's assertion on page 14 of the response that Bruckman et al. in view of Gaskill do not teach directing a node to ignore the at least one identifier. First, as discussed in the rejections above, the system described by Bruckman et al. in view of Gaskill includes at least one identifier identifying the occupied time slots of the second frame (Gaskill, column 2, lines 13-29). Gaskill further teaches directing the receiving node to ignore the at least one identifier after the particular time slots corresponding to the identifier have been already received (column 4, lines 32-42). For example, Gaskill teaches that the receiver may read another identifier at that point, thereby ignoring the earlier identifier (since the data corresponding to the earlier identifier has already been read). Gaskill also teaches that the new identifier may direct the receiver to read all the time slots, not only specifically selected ones as before (column 5, lines 18-21). Examiner respectfully maintains that it would have been obvious to a person of ordinary skill in the art to direct the second/existing node to ignore the at least one identifier as taught by Gaskill in the system disclosed by Bruckman et al. in order to enable the node to read another frame with data in all the time slots (i.e., a frame that does not have data in only particular time slots) after the upgrade is completed.

***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Y. Leung whose telephone number is 571-272-3023. The examiner can normally be reached on Monday to Friday, 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on 571-272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christina Y Leung
CHRISTINA LEUNG
PRIMARY EXAMINER